DEFENSE INFORMATION SYSTEMS AGENCY
JOINT INTEROPERABILITY TEST COMMAND
2001 BRAINARD ROAD
FORT HUACHUCA, ARIZONA 85613-7051

IN REPLY REFER TO: Networks and Transport Division (JTE) 15 July 2004

MEMORANDUM FOR DISTRIBUTION

SUBJECT: Special Interoperability Test Certification of the Amcom Software Phone Server Version 3.8 with the Nortel Networks Meridian Switching Load (MSL)-100

References: (a) DOD Directive 4630.5, "Interoperability and Supportability of Information Technology (IT) and National Security Systems (NSS)," 5 May 2004
(b) CJCSI 6212.01C, "Interoperability and Supportability of Information Technology and National Security Systems," 20 November 2003

1. References (a) and (b) establish the Defense Information Systems Agency, Joint Interoperability Test Command (JITC), as the responsible organization for interoperability test certification. Additional references are provided in enclosure 1.

2. The Amcom Software Phone Server Version 3.8, hereinafter referred to as the System Under Test (SUT), emulates all the features and functions of the Nortel Networks MSL-100 NT4X09 hard console. The SUT was tested in a multiple console configuration and is interoperable with the consoles listed in table 2-2 of enclosure 2, as shown in figure 2-2 of enclosure 2. When used with the Nortel Networks MSL-100 the SUT meets all of the critical interoperability requirements and is certified for joint use within the Defense Switched Network (DSN). The SUT met the critical interoperability requirements for attendant services set forth in reference (c). Testing was conducted using test procedures derived from reference (d). This certification expires upon changes that affect interoperability, but no later than three years from the date of this memorandum.

3. This certification is based on interoperability testing conducted from 24 May 2004 through 4 June 2004 by the JITC at the Global Information Grid Network Test Facility, Fort Huachuca, AZ. The Certification Testing Summary (enclosure 2) documents the test results and describes the test network. Users should verify interoperability before deploying the SUT in an environment that varies significantly from that described.

4. The Functional Requirements used to evaluate the interoperability of the SUT and the interoperability statuses are indicated in table 1.

Table 2. SUT Functional Requirements and Interoperability Status

Interface	Critical	Certified	Critical Functional Requirements	Met	GSCR Paragraph
Nortel Networks MSL-100 Analog Proprietary [1]	Yes[2]	Yes	Precedence and Preemption	Yes	2.2.1
			Call Display	Yes	2.2.2
			Class of Service Override	Yes	2.2.3
			Busy Override and Busy Verification	Yes	2.2.4
			Night Service	Yes	2.2.5
			Automatic Recall of Attendant	Yes	2.2.6
			Calls in Queue to the Attendant	Yes	2.2.7

Legend:
BRI - Basic Rate Interface
DSN - Defense Switched Network
EIA - Electronic Industries Alliance
GSCR - Generic Switching Center Requirements
ISDN - Integrated Services Digital Network
SUT - System Under Test
TCP/IP - Transmission Control Protocol/Internet Protocol

Notes:
1. This interface was tested and certified via the MSL-100 switching system with other consoles listed in table 2-2 of enclosure 2, as shown in figure 2-2 of enclosure 2.
2. Although Analog Proprietary is not a critical interface in itself, the interface between the SUT and the Attendant Console is critical and can be met with any one of the following interfaces: ISDN BRI, Analog, Proprietary, TCP/IP Ethernet, or Serial (EIA-232, EIA-449, EIA-530).

5. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Unclassified but Sensitive Internet Protocol Router Network (NIPRNet) e-mail. More comprehensive interoperability status information is available via the JITC System Tracking Program (STP). The STP is accessible by .mil/.gov users on the NIPRNet at https://stp.fhu.disa.mil/. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool (JIT) at http://jit.fhu.disa.mil (NIPRNet), or http://199.208.204.125/ (SIPRNet). Information related to DSN testing is on the Telecom Switched Services Interoperability (TSSI) website at http://jitc.fhu.disa.mil/tssi.

6. The JITC point of contact is Capt. Michel Roy, DSN 821-8575, or commercial (520) 533-8575. The e-mail address is roym@fhu.disa.mil.

FOR THE COMMANDER:

2 Enclosures a/s

LESLIE CLAUDIO
Chief
Networks and Transport Division

JITC Memo, JTE, Special Interoperability Test Certification of the Amcom Software Phone Server Version 3.8 with the Nortel Networks MSL-100

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Commander, Defense Information Systems Agency (DISA), ATTN: GS23 (Mr. Osman), Room 5w23, 5275 Leesburg Pike (RTE 7), Falls Church, VA 22041

ADDITIONAL REFERENCES

(c) Defense Information Systems Agency, "Department of Defense Voice Networks Generic Switching Center Requirements (GSCR)," 8 September 2003
(d) Joint Interoperability Test Command, "Defense Switched Network Generic Switch Test Plan (GSTP)," 23 April 2004

CERTIFICATION TESTING SUMMARY

1. SYSTEM TITLE. The Amcom Software Phone Server Version 3.8, hereinafter referred to as System Under Test (SUT).

2. PROPONENT. Defense Information Systems Agency (DISA).

3. PROGRAM MANAGER. Mr. Howard Osman, GS23, Room 5W23, 5275 Leesburg Pike, Falls Church, VA 22041, e-mail: Osmanh@ncr.disa.mil.

4. TESTERS. Joint Interoperability Test Command (JITC), Ft. Huachuca, AZ.

5. SYSTEM UNDER TEST DESCRIPTION. The SUT is a personal computer-based platform, which emulates the NT4X09 hard console for the Nortel Networks MSL-100 Multifunction Switch. It employs the Basic Operator Services System (BOSS) Version 1.0, and the Phone Server software Version 3.8 running on the Windows XP Professional Operating System. The SUT features include:

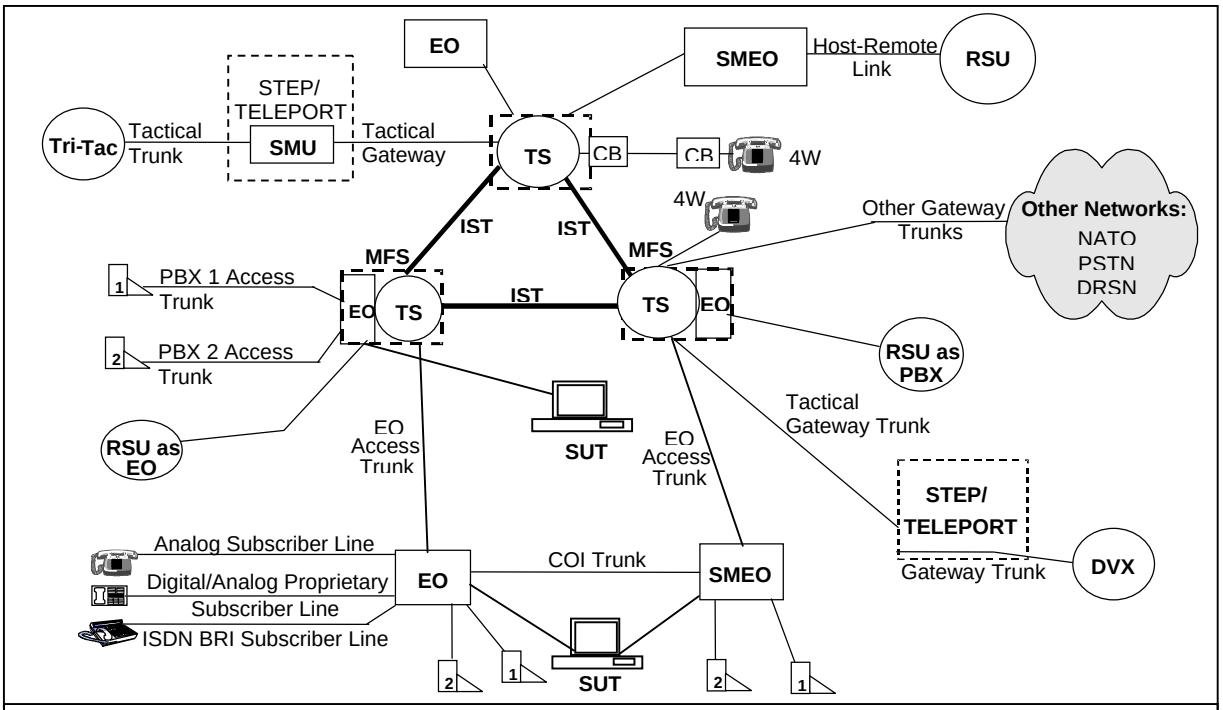
- answering, parking, holding, and transferring calls.
- position busy, end-to-end signaling, busy verification, and display of queued calls.
- call forwarding, do not disturb, serial calls, trouble key, and trunk access control.
- call-handling, control, and security features.
- set of screen and web-based applications including directory services, paging, messaging, and on-call scheduling.

6. OPERATIONAL ARCHITECTURE. The Generic Switching Center Requirements (GSCR) DSN architecture in figure 2-1 depicts the relationship of the SUT to the DSN switches.

7. REQUIRED SYSTEM INTERFACES. Requirements specific to the SUT and interoperability results are listed in table 2-1. These requirements are derived from:

a. GSCR (reference (c)) Interface and Functional Requirements (FRs).

b. The test procedures are listed in reference (d), overall system interoperability performance.



Legend:

4W - 4-Wire
BRI - Basic Rate Interface
CB - Channel Bank
COI - Community of Interest
DRSN - Defense Red Switch Network
DSN - Defense Switched Network
DVX - Deployable Voice Exchange
EO - End Office
ISDN - Integrated Services Digital Network
IST - Inter-Switch Trunk
MFS - Multifunction Switch
MLPP - Multi-Level Precedence and Preemption
NATO - North Atlantic Treaty Organization
PBX - Private Branch Exchange
PSTN - Public Switched Telephone Network
RSU - Remote Switching Unit
SMEO - Small EO
SMU - Switched Multiplexer Unit
STEP - Standardized Tactical Entry Point
SUT - System Under Test
Tri-Tac - Tri-Service Tactical Communications Program
TS - Tandem Switch

1 MLPP-Capable PBX

2 Non-MLPP PBX

Figure 2-1. DSN Architecture

Table 2-1. SUT Functional Requirements and Interoperability Status

Interface	Critical	Certified	Critical Functional Requirements	Met	GSCR Paragraph
Nortel Networks MSL-100 Analog Proprietary [1]	Yes[2]	Yes	Precedence and Preemption	Yes	2.2.1
			Call Display	Yes	2.2.2
			Class of Service Override	Yes	2.2.3
			Busy Override and Busy Verification	Yes	2.2.4
			Night Service	Yes	2.2.5
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Notes:
1. This interface was tested and certified via the MSL-100 switching system with other consoles listed in table 2-2 of enclosure 2, as shown in figure 2-2 of enclosure 2.
2. Although Analog Proprietary is not a critical interface in itself, the interface between the SUT and the Attendant Console is critical and can be met with any one of the following interfaces: ISDN BRI, Analog, Proprietary, TCP/IP Ethernet, or Serial (EIA-232, EIA-449, EIA-530).

8. TEST NETWORK DESCRIPTION. The SUT was tested at JITC's Network Engineering and Integration Laboratory in a manner and configuration similar to that of the DSN operational environment. Testing of the system's required functions and features was conducted using the test configuration depicted in figure 2-2.

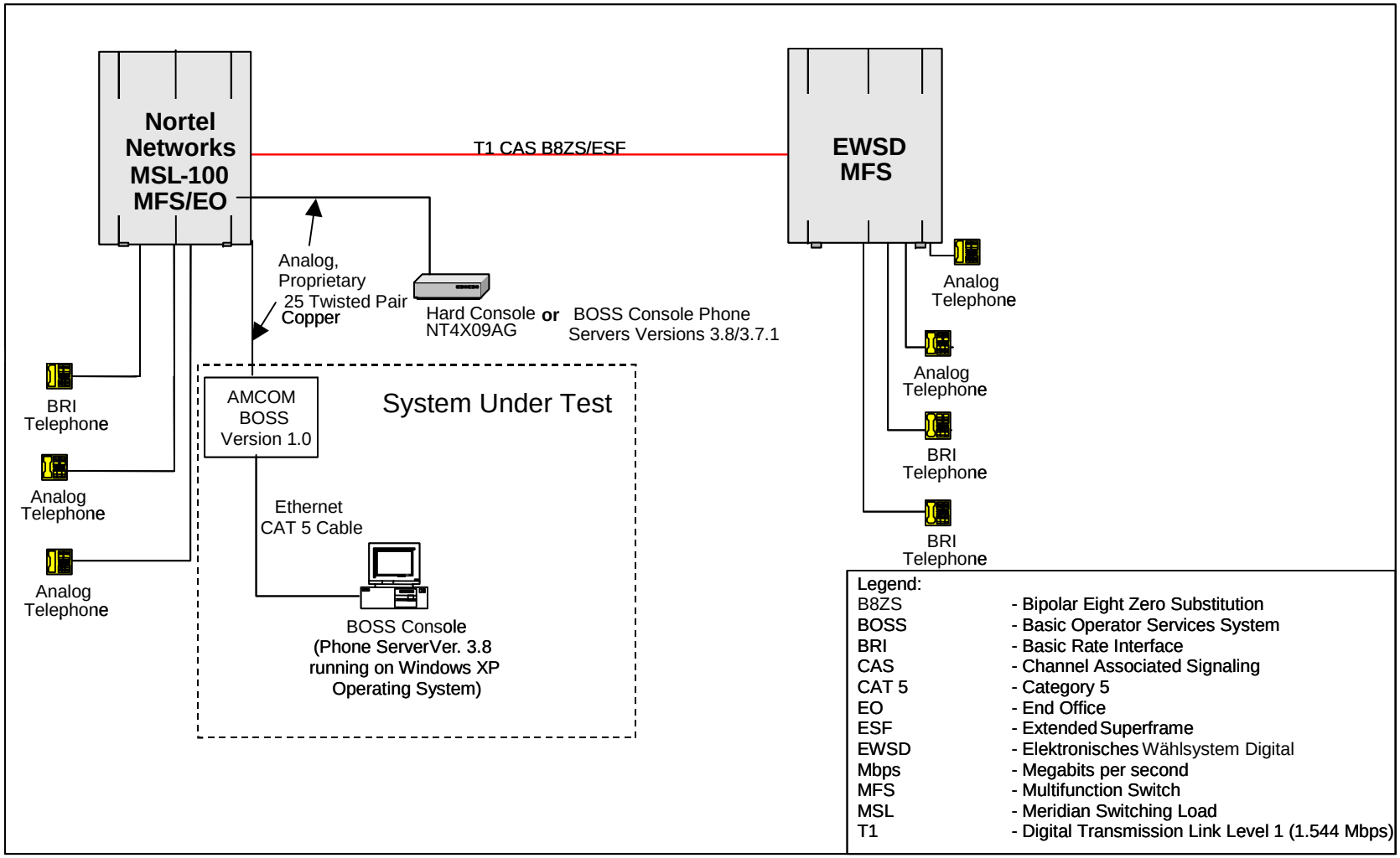

Figure 2-2. Test Configuration

9. SYSTEM CONFIGURATIONS. Table 2-2 provides the system configurations and their respective software used in the test.

Table 2-2. Tested System Configurations

System Name	Hardware/Software Release
Nortel Networks MSL-100	SE06
Northern Telecom (Hard Console)	NT4X09AG
T-Metrics PhoneGroups® Personal Computer-Based Console	7102081953
Amcom Software Phone Server (Soft Console)	Version 3.8
Amcom Software Phone Server (Soft Console)	Version 3.7.1
BOSS Interface Box	Version 1.0
EWSD MFS	Version 19d
Hewlett-Packard Compaq PC	Windows XP Professional with Service Pack 1
Legend: EWSD - Elektronisches Wählsystem Digital MFS - Multifunction Switch MSL - Meridian Switching Load PC - Personal Computer SE - Secession Enterprise	

10. TEST LIMITATIONS. None.

11. TEST RESULTS

a. Discussion

(1) Precedence and Preemption (GSCR Paragraph 2.2.1). The attendant console operates with Multi-Level Precedence and Preemption as described in section 3 of reference (c).

(2) Call Display (GSCR Paragraph 2.2.2). The attendant console provides a visual display of the calling number, class of service and precedence level for incoming direct-dialed calls and diverted calls to the attendant.

(3) Class of Service Override (GSCR paragraph 2.2.3). The attendant provides the capability to override any class of service (calling area or precedence) of the calling party on a call-by-call basis.

(4) Busy Override and Busy Verification (GSCR paragraph 2.2.4). The SUT meets the following FRs for busy override and busy verification:

- The attendant has the capability to override a busy line condition. If the called line being verified is busy, off-hook supervision is given to the attendant performing the busy verification.

- The attendant has the capability to enter an existing busy line to inform the user of an incoming call. An override tone is provided to the busy line prior to the

attendant entering the conversation, and the tone is repeated periodically as long as the attendant is connected.

(5) Night Service (GSCR paragraph 2.2.5). The attendant console has the ability to route all calls normally directed to the console to a night service deflection. The night service deflection is a fixed or manually selected directory number.

(6) Automatic Recall of Attendant (GSCR paragraph 2.2.6). When an attendant extends a call to a station that is busy or does not answer within a preset time, the extended party is automatically recalled to the console. If that console is busy, the recall shall be placed into the console queue; if the console is out of service, the recall is routed to another console.

(7) Calls in Queue to the Attendant (GSCR paragraph 2.2.7). The attendant console has the capability to place calls in a waiting queue. Calls placed in queue to the attendant console are retrieved by the attendant in order of precedence level (FLASH-OVERRIDE first, ROUTINE last) and longest holding time. Calls in queue are not lost when a console is placed out of service or forwarded to night service deflection. When the console is placed out of service or forwarded to night service while calls are in queue, the console is capable of both of the following solutions:

(a) All calls in queue are forwarded first to the centralized attendant, then to night service.

(b) All subsequent calls placed to the attendant console are forwarded first to the centralized attendant and then to night service. The attendant console is able to answer all remaining calls in queue, preventing any calls from being lost.

b. Test Summary. The SUT when used with the Nortel Networks MSL-100 switch met the critical interoperability requirements for an attendant console set forth in reference (c) and is certified for joint use within the DSN. The SUT emulates all the features and functions of the Nortel Networks MSL-100 NT4X09 hard console. The SUT was tested in a multiple console configuration and is interoperable with the consoles listed in table 2-2.

12. TEST AND ANALYSIS REPORT. No detailed test report was developed per the Program Manager's request. JITC distributes interoperability information via the JITC Electronic Report Distribution (ERD) system, which uses Unclassified but Sensitive Internet Protocol Router Network (NIPRNet) e-mail. More comprehensive interoperability status information is available via the JITC System Tracking Program (STP). The STP is accessible by .mil/gov users on the NIPRNet at https://stp.fhu.disa.mil/. Test reports, lessons learned, and related testing documents and references are on the JITC Joint Interoperability Tool (JIT) at http://jit.fhu.disa.mil (NIPRNet), or http://199.208.204.125/ (SIPRNet). Information related to DSN testing is on the Telecom Switched Services Interoperability (TSSI) website at http://jitc.fhu.disa.mil/tssi.